



Docket No. 4527-103.1 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of  
LOGAN, Brent

Serial No. 10/071,037

Filed: February 8, 2002

Title: METHOD AND SYSTEM FOR  
REPRODUCING A PROGRESSIVE OR  
REGRESSIVE PATTERN OF SONIC  
VARIATIONS

Group Art Unit: 3714

Examiner: HARRIS, Chandra L.

x

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

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TECHNOLOGY CENTER R3700

**DECLARATION OF BRENT LOGAN, Ph.D.**

Sir:

I, Brent Logan, Ph.D., an inventor of the above-described patent application, U.S. Patent Application No. 10,071,037 ("the '037 application"), hereby declares as follows:

1. I have successfully applied to postnatal humans the method of claim 17 and the system of claims 33 and 36 of the '037 application.
2. Use of 10-20 cps (hertz) sonic progressions and 10-5 hertz decreases were administered to the postnatal human by earphones at one minute per frequency to three adult subjects.
3. It was found corresponding mood elevation or subsidence occurred in all cases, with these effects lasting a minimum of two hours.
4. I have successfully applied the method of claim 17 and the system of claims 37 of the '037 application to incubated premature infants at weeks 27-34 post-conception during a study with Mikhail Offengame, M.D., Director of Child Pathomorphology, Central Children's Hospital, Novgorod, Russia and a team of physicians and nurses for the project.
5. Unit speaker faces were affixed directly to the incubator windows, with

appropriately diametered openings in the Plexiglas, a rubber ring around the speaker edge for a secure fit, and intervening cloth to achieve muffling of the sonic stimuli.

6. Sound progressions were cued to the number of days remaining until a normative 39.5 week full term gestation divided by 16 sequences, with each advanced at the calculated change point.

7. Results demonstrated in each of the several subjects increased infant limb motility, with elevation of blood-oxygen levels to the brain, and removal from incubation by a minimum of 60% in their expected duration; standard prematurity deficits were notably reduced.

8. The outcome of the application of claims 12, 14, 15, 17, 19, 20 and 33-40 can be replicated by one of ordinary skill in the art.

9. The claimed elevation in alpha rhythm (whether from its fetal/neonatal norm of 1-2 cycles per second, or hertz, or the adult 8-13 cps, averaging 10.2 hertz) can be measured by electroencephalography, a standard instrument for detecting and recording brainwaves since its 1924 discovery by the German psychiatrist Hans Berg, and clinical usage beginning in 1934 by British neurophysiologist Edgar Adrian. Additionally, magnetic resonance imaging, particularly virtual MRI, and tomographic scanning such as PET, can be used to provide accurate empirical means for tracking both magnitude and transmission speed of neural response.

10. Accordingly, undue experimentation is hardly required to implement the invention defined by the present claims of the '037 application.

11. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and, further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing therefrom.

Dated: April 23, 2004

By: Brent Logan  
BRENT LOGAN, Ph.D.